

Organic Farm Structure by Category of Agricultural Use

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Abstract

Organic production systems are based on specific and precise standards of production, pursuing the achievement of optimal agro-systems, easy to sustain in terms of social, environmental and economic. Organic production systems plays a dual social role, because, on the one hand provides for a specific market that is responding to consumer demand for organic products, and on the other hand delivers public goods, contributing to environmental protection, animal welfare and rural development. The main goal of organic agriculture is to optimize the health and productivity of interdependent communities of soil, plants, animals and humans, providing new guidance of agricultural diversification in a general context of protecting the environment and promoting the development of sustainable agriculture. In 2013, the continent with the largest organic cultivated surface was Australia / Oceania, over 17.3 million, up to 5 million hectares compared to 2011, followed by Europe with 11.4 mil. Ha, Latin America - 6.6 million ha, Asia - 3.4 million ha North America - 3.0 million ha and Africa - 1.2 million ha of the 43.1 million total hectares grown in organic management system, almost two thirds are permanent pastures (27 million hectares), followed by agricultural land area totaling 10.9 million ha (arable land - 7.7 million ha permanent crops - 3.2 million ha).

Keywords: distribution, farm, organic farming, uses categories

1. Introduction

Organic farming is a part of a broad spectrum of methodologies that support the environment, relying on minimizing external inputs and avoiding the use of synthetic fertilizers and pesticides. Organic production systems are based on specific and precise standards of production, pursuing the achievement of optimal agro system, easy to sustain in social, environmental and economic terms. The primary goal of organic agriculture is to optimize the health and productivity of interdependent communities on soil, plants, animals and humans.

Organic farming involves production management systems which promote and enhance agro

ecosystem health, including biodiversity, biological cycles and biological soil activity [1].

Organic farming represents an alternative to traditional agriculture as a result of its malfunction and causes, which decreased resistance of plants, animal health and soil quality and thus human health. Organic farming is based on increasing soil with more organic content using natural organic fertilizers.

Organic farming produces unpolluted products and provides new guidelines in agriculture through diversification in a general context of protecting the environment and promoting sustainable agriculture development [2]. “Organic” is a labeling term that denotes products obtained by the organic production standards and certified by a legally constituted body or authority in this regard.

Organic farming could be defined as a system of farm management, involving significant restrictions in terms of synthetic chemicals for

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agriculture. The method involves different cultural practices that aim at protecting the environment, maintaining and increasing soil fertility, obtaining quality unpolluted agricultural products and promoting sustainable agricultural development. Control is provided in all stages of production, storage, processing and marketing, all the operators are subject to continuous and mandatory monitoring that is officially recognized and supervised by the state.

In 1991, EU Regulation appears on organic farming, marking the beginning of official interest on this type of farming in Europe. Since 1999, the FAO Global Codex Alimentarius includes organic farming. Information from Codex are meant to guide and promote organic agriculture, organic food labeling requirements and contribute to their standardization and thereby protect consumers and facilitate international trade.

In 2007 it was approved a Regulation no. 834 of CE on organic production and labeling of organic products and also a repealing Regulation no. 2092/1991. This Regulation lays down common objectives and principles underlying the rules it

contains on: all stages of production, processing and distribution of organic products and their control, use in the labeling and advertising of indications referring to organic production that apply from 1st January 2009. This Regulation shall apply to the following products of agricultural origin, including those from aquaculture, when placed on the market or are intended to be placed on the market: live or unprocessed agricultural products; processed agricultural products for use as food; animal food; vegetative material and seeds for cultivation [3,4]. In 2013, the continent with the largest surface cultivated organically is Oceania, over 17.3 mil ha, up with 5.1 mil ha compared to 2010 [5,6], followed by Europe with 11.4 million ha, up with 1.45 mil ha compared to 2010 [5,6]; Latin America - 6.61 mil ha, down with 1.77 mil ha compared to 2010 [5,6]; Asia - 3.42 mil ha, up with 647.648 hectares compared to 2010 [5,6]; North America - 3.04 mil ha, up with 395.086 compared to 2010 [5,6] and Africa - about 1.3 mil ha up with 151.179 hectares compared to 2010 (Table 1) (Figure 1) [5,6].

Table 1. Organic cultivated area and number of organic farms on continents

Continent	Organic agricultural land (ha)		Share of total agricultural land		Producers (numbers)	
	2010	2013	2010	2013	2010	2013
Africa	1,075,829	1,227,008	0.1	0.1	542,839	574,129
Asia	2,778,291	3,425,939	0.2	0.2	460,762	730,744
Europe	10,002,087	11,460,773	2.1	2.4	277,362	334,870
Latin America	8,389,459	6,611,636	1.4	1.1	272,232	319,459
Northern America	2,652,624	3,047,710	0.7	0.7	16,870	16,393
Oceania	12,144,984	17,321,733	2.9	4.1	8,483	22,997
TOTAL	37,041,004	43,091,113	0.9	1.0	1,578,407	1,998,592

Source: [5,6]

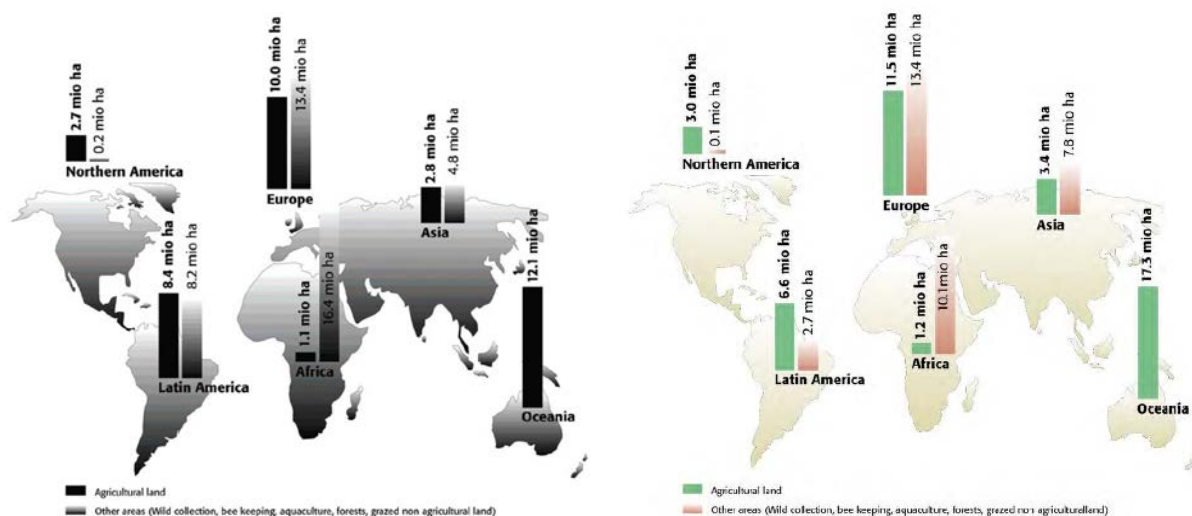


Figure 1. Organic farming in the world (2010, 2013)

Source: [5,6]

2. Materials and methods

This paper proposes an analysis of the main categories of land according to its use in organic farming, analysis that was performed using mainly a quantitative method - documentary analysis of empirical data from institutional documents - analysis that is based on the data presented in "The World of Organic Agriculture. Statistics and Emerging Trends" in 2012-2015. Also, the main categories of land use on the general classification system of FAO are presented as follows: arable land; permanent crops; cropland for which no further details were available (cropland = arable land + permanent cropland with no details

available); permanent grassland/grazing areas; other agricultural areas (such as for instance hedges); and agricultural land for which no details were available.

3. Results and discussion

Table 2 presents the use of the main categories of agricultural use, on continents in 2013; it shows that more than half of organic agriculture land (62.7%) is used as grassland /permanent pasture and only a quarter of the total area as arable land (17.7%) [6]. On continental level, it appears that each continent has its own specifics.

Table 2. Organic agricultural land by the main agricultural use categories and continents (2013) (ha)

Land use	Africa	Asia	Europe	Latin America	Northern America	Oceania	Total
Arable crops	237,219	1,253,249	4,599,369	209,335	1,321,654	38,679	7,659,506
Permanent crops	567,634	388,077	1,296,073	845,020	67,089	70,950	3,234,842
Agricultural land, no details	340,301	607,773	226,394	721,672	-	435,731	2,328,106
Permanent grassland/ grazing	64,415	27,676	4,828,810	4,343,102	1,050,097	16,728,022	27,042,122
Other agricultural land	9,518	62,970	437,939	7,552	219,957	-	737,936
Cropland, no details	8,002	1,086,194	72,187	484,955	388,912	48,351	2,088,601
Total	1,227,088	3,425,939	11,460,773	6,611,636	3,047,710	17,321,733	43,091,113

Source: [6]

The evolution of organic agriculture land on the main categories of agricultural use and on continents for 2010-2013 is shown in Table 3,

noticing an increasing trend of organic agriculture land.

Table 3. Organic agricultural land by the main agricultural use categories and continents (ha) Source: [5-8]

Land use	Year	Africa	Asia	Europe	Latin America	Northern America	Oceania	Total
Arable crops	2010	100,139	186,053	4,058,385	412,349	1,311,143	38,062	6,106,131
	2011	153,108	259,664	4,395,339	182,106	1,311,143	37,205	6,338,566
	2012	168,801	1,277,956	4,682,398	186,799	1,131,700	38,679	7,486,333
	2013	237,219	1,253,249	4,599,369	209,335	1,321,654	38,679	7,659,506
Permanent crops	2010	485,739	237,878	983,783	866,086	64,572	20,754	2,658,811
	2011	408,424	256,425	1,055,023	754,832	64,572	59,113	2,598,390
	2012	544,758	585,773	1,097,101	820,898	120,219	63,891	3,232,640
	2013	567,634	388,077	1,296,073	845,020	67,089	70,950	3,234,842
Agricultural land and crops, no details	2010	394,821	1,725,303	143,742	1,382,758	12,321	318,125	3,974,799
	2011	415,509	2,430,555	34,813	1,027,758	159,931	293,012	4,356,584
	2012	364,739	933,306	145,727	1,094,083	161,498	281,283	2,980,636
	2013	340,301	607,773	226,394	721,672	-	435,731	2,328,106
Permanent grassland/grazing	2010	30,351	600,457	4,499,872	5,691,032	1,143,689	11,752,386	23,717,788
	2011	62,381	601,303	4,838,525	4,834,083	1,133,617	11,756,325	23,226,234
	2012	31,369	21,865	4,919,765	4,690,947	1,150,709	11,734,194	22,548,849
	2013	64,415	27,676	4,828,810	4,343,102	1,050,097	16,728,022	27,042,122
Other agricultural land	2010	58,406	449	276,965	30,001	23,338	7,702	396,860
	2011	16,554	30,207	295,279	30,974	23,338	-	396,352
	2012	23,328	59,896	324,409	10,298	69,308	-	487,239
	2013	9,518	62,970	437,939	7,552	219,957	-	737,936
Cropland, no details	2010	6,373	28,151	39,341	7,234	97,561	7,956	186,616
	2011	17,680	128,125	18,149	27,857	97,561	40,188	329,559
	2012	12,832	339,071	2,013	33,472	378,920	46,269	812,577
	2013	8,002	1,086,194	72,187	484,955	388,912	48,351	2,088,601
Total	2010	1,075,829	2,778,291	10,002,087	8,389,459	2,652,624	12,144,984	37,041,004
	2011	1,073,657	3,706,280	10,637,128	6,857,611	2,790,162	12,185,843	37,245,686
	2012	1,145,827	3,217,867	11,171,413	6,836,498	3,012,354	12,164,316	37,548,275
	2013	1,227,088	3,425,939	11,460,773	6,611,636	3,047,710	17,321,733	43,091,113

The table 4 presents the total organic agriculture land on the main categories of agricultural and crop use. Cereals (3,309,788 ha) and green fodder from arable land (2,381,943 ha) are the main crop

categories with the largest areas of arable land; Coffee (725,627 ha), olive (611,452 ha), nuts (322,074 ha) are the main crop categories with the largest surfaces in permanent crops [5,6].

Table 4. Total organic agricultural land on the categories of primary agricultural use and on crops in world (2010, 2013)

Land use	Category of primary agricultural use	Agricultural area (ha)	
		2010	2013
Agricultural land and crops, no details	Agricultural land and crops, no details	3,974,799	2,348,071
Arable crops	Arable crops, no details	99,200	196,089
	Cereals	2,512,715	3,309,788
	Arable crops, other	76,083	77,550
	Flowers and ornamental plants	291	9,877
	Green fodder from arable land	2,032,379	2,381,943
	Hops	228	188
	Industrial crops	28,641	21,876
	Medicinal and aromatic plants	87,602	86,624
	Oilseeds	468,021	779,803
	Mushrooms and truffles	59	1,518
	Protein crops	299,575	296,073
	Root crops	92,221	50,628
	Seeds and seedlings	5,503	4,802
	Textile crops	62,408	89,748
	Vegetables	271,650	305,342
	Strawberries	3,347	3,638
	Sugarcane	66,101	42,328
	Tobacco	106	1,690
Arable crops total		6,106,131	7,659,506
Cropland, no details	Cropland, no details	186,616	2,068,636
Other agricultural land	Fallow land, crop rotation	311,583	558,620
	Home gardens	48	839
	Hedges	-	618
	Other agricultural land, no details	39,090	51,738
	Unutilized land	46,138	126,113
	Pathways	-	8
Other agricultural land, total		396,860	737,936
Permanent crops	Citrus fruit	60,709	81,577
	Cocoa	287,411	227,695
	Berries	36,629	42,688
	Coconut	100,492	58,656
	Coffee	642,883	725,627
	Flowers and ornamental plants, permanent	118	22
	Fruit, no details	1,295	3,869
	Fruit, temperate	124,564	213,023
	Fruit, tropical and subtropical	189,959	209,240
	Nuts	262,520	322,074
	Grapes	217,634	311,595
	Medicinal and aromatic plants, permanent	27,167	35,001
	Nurseries	1,103	752
	Olives	495,480	611,452
	Other permanent crops	160,369	320,518
	Tea/mate	41,017	71,054
Permanent crops total		2,658,811	3,234,842
Permanent grassland total		23,717,788	27,042,122
TOTAL		37,041,004	43,091,113

Source: [5,6]

Globally, arable land represents more than a quarter of organic agricultural land covering 6.10 million hectares of organic farmland in 2010, 6.33

million hectares (2011), 7.48 million hectares (2012) and in 2013 a total of 7.65 million hectares

[5-8]. Most of organic arable land is in Europe,

followed by North America and Asia (Figure 2).

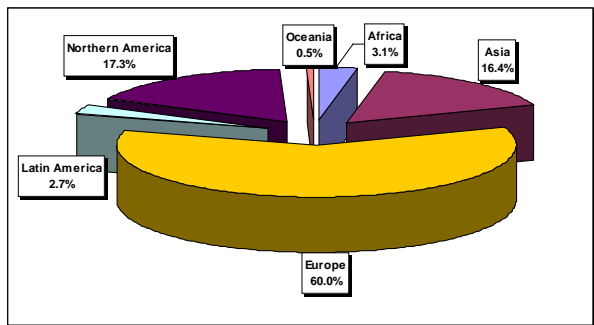


Figure 2. The situation of arable land on the continents (%) (2013)
Source: [6]

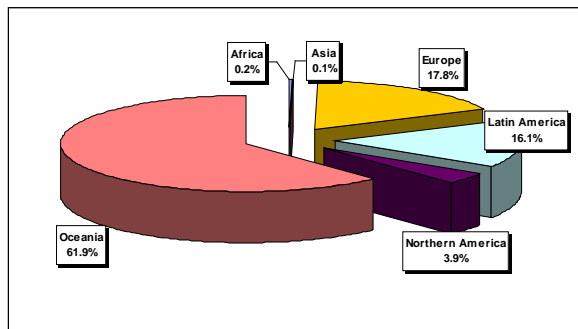


Figure 4. The situation of permanent pastures/meadows on the continents (%) (2013)
Source: [6]

Globally, permanent crops represent 7% of organic farmland that we found information about (2.65 million hectares) in 2010 [5]. Most of this land is in Europe, Latin America and Africa. The most important crops are olives (about a quarter of permanent crops), coffee and fruits. In 2013, permanent crops represented 7.5% of agricultural land (3.23 million hectares) [6]. Also, most is found in Europe, followed by Latin America and Africa, with coffee, olives, fruit and nuts (Figure 3).

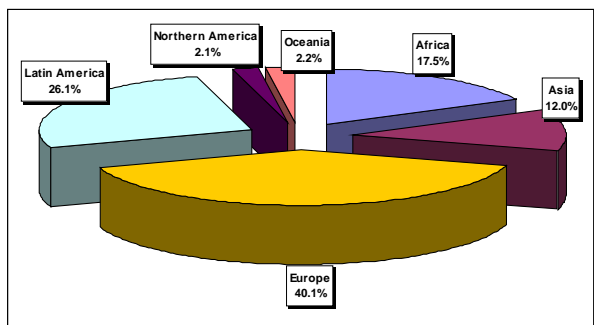


Figure 3. The situation of permanent crops on the continents (%) (2013)
Source: [6]

Globally, in 2010, grassland / permanent pastures (over 23 million hectares) represent almost two thirds of the world's organic land [5]. More than half of them are in Australia, but large areas of permanent grassland we also find in Latin America and Europe. In 2013, permanent pastures (over 23 million hectares) represent two thirds of all organic land across the globe [6]. This year, more than half of pastures are in Oceania, Latin America and Europe in addition (Figure 4).

4. Conclusions

Developments and adaptations of contemporary agricultural policies, rural world reflections on its future destiny and raising political awareness on environmental issues imposed a favorable climate for the development of organic farming.

Organic farming produces unpolluted products and provides new guidelines through agricultural diversification in a general context of protecting the environment and promoting sustainable agriculture development. Method of organic production plays a dual role in our society, because on the one hand provides a specific market responding to consumer demand for organic products, and on the other hand delivers public goods contributing to environmental protection and animal welfare and rural development.

One of the main goals of organic farming is supporting in good condition and on long-term the environment, leading to a downward implementation of environmental pollution. All this is supplemented by action on environmental protection (protective plant location). Both sides of measures have been proven in practice. Indeed organic farming means agriculture that protects the environment.

The favorable evolution of organic agriculture can be seen in official documents of international institutions, the Research Institute of Organic Agriculture (FiBL) and the International Federation of Organic Agriculture Movements (IFOAM - International Organics).

In 2013, almost two-thirds of the agricultural land was grassland/grazing areas (27 million hectares)

from 23 millions ha in 2010. With a total of at least 7.7 million hectares, arable land constitutes almost 20 percent of the organic agricultural land. An increase of almost three percent over 2012 was reported. Most of this category of land is used for cereals including rice (3.3 million hectares), followed by green fodder from arable land (2.4 million hectares), oilseeds (0.8 million hectares), vegetables (0.3 million hectares), and protein crops (0.3 million hectares). Permanent crops account for seven percent of the organic agricultural land, amounting to 3.2 million hectares. The most important permanent crops are coffee (with more than 0.7 million hectares, constituting almost one quarter of the organic permanent cropland), followed by olives (0.6 million hectares), nuts and grapes (0.3 million hectares each), and cocoa (0.2 million hectares).

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